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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/672,186

09/26/2003

Michael Thomas Greene

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EXAMINER

MURRAY, DANIEL C

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<p align="center">Advisory Action Before the Filing of an Appeal Brief</p>	<p>Application No. 10/672,186</p>	<p>Applicant(s) GREENE, MICHAEL THOMAS</p>	
	<p>Examiner DANIEL C. MURRAY</p>	<p>Art Unit 2443</p>	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 02 April 2010 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
- b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
- (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ They raise the issue of new matter (see NOTE below);
- (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
- The status of the claim(s) is (or will be) as follows:
- Claim(s) allowed: _____.
- Claim(s) objected to: _____.
- Claim(s) rejected: _____.
- Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:
See Continuation Sheet.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

/George C Neurauter, Jr./
Primary Examiner, Art Unit 2443

Continuation of 11. The Examiner has fully considered Applicant's remarks. These issues have been discussed in depth and have been explained in detail in previous Office Actions and interviews.

With respect to Applicant's argument (i) Andreev does not disclose a method for routing all connection independently and in parallel.

In response to Applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The rejection of Applicant's claimed invention is clearly based on the combination of Andreev and Rostoker as previously explained in detail in previous Office Actions and interviews (and explained once again below).

With respect to Applicant's argument (ii) Examiner appears to attach great importance to the question of "simultaneity", however it is submitted that simultaneity is not an essential feature of the present invention. Furthermore, Applicant agrees with the Examiner that "independent and in parallel" does not necessarily imply "simultaneous".

Applicant claims "independent and parallel" and that "Simultaneity is not essential to the present invention." Yet Applicant continues to frame arguments with respect to, not only, independent and parallel but also simultaneity. While Applicant states, simultaneity is not an essential feature of the present invention, Applicant's arguments seem to hinge on simultaneity (especially with respect to Andreev and the phrase "substantially simultaneous" as discloses therein). Hence the Examiner must respond with respect to independent, parallel and simultaneous in order to fully address Applicant's response as previously explained in detail in previous Office Actions and interviews (and explained once again below).

With respect to Applicant's argument (iii) Two connections which must be routed serially, and where the routing of the second depends on the routing of the first, cannot be said to be routable 'in parallel' and are not 'independent'. Applicant agrees that f Andreev's algorithm could route connections independently and in parallel then with teachings from Rostoker it could be made (potentially) simultaneous too. However, since Andreev's algorithm can only route connections substantially independently and substantially in parallel, the teachings from Rostoker only allow it to be made substantially (potentially) simultaneous.

SEE MPEP 2143 Examples of Basic Requirements of a Prima Facie Case of Obviousness which states:

The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1395-97 (2007) identified a number of rationales to support a conclusion of obviousness which are consistent with the proper "functional approach" to the determination of obviousness as laid down in *Graham*. The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit.

Rationale that may support obviousness include applying a known technique to a known device (method, or product) ready for improvement to yield predictable results

(1) a finding that the prior art contained a "base" device (method, or product) upon which the claimed invention can be seen as an "improvement;"

Andreev is clearly a base device upon which Applicant's claimed invention can be seen as an improvement. Andreev clearly discloses substantially operating in parallel, independently, and simultaneously except in cases where there is an overlap between regions a problem which Applicant's claimed invention seeks to solve. Andreev clearly discloses routing all connections independently and in parallel (figure 2, figure 3, abstract, paragraph [0033], [0034], [0088], [0091], [0096]). Andreev clearly discloses that individual routes are considered independently (individually without regard to other routes) and in parallel (concurrently). When an overlap between regions occurs Andreev considers the routes with respect to one region and then the other, while still considered independently and in parallel they are not however considered simultaneously.

(2) a finding that the prior art contained a known technique that is applicable to the base device (method, or product);

Rostoker clearly discloses a known technique (independent, simultaneous and in parallel processing) which is the improvement which Applicant is attempting to claim. Rostoker clearly discloses a placement optimization methodology is decomposed into a plurality of cell placement optimization processes that are performed simultaneously by parallel processors on input data representing the chip. The results of the optimization processes are recomposed to produce an optimized cell placement. The fitness of the optimized cell placement is analyzed, and the parallel processors are controlled to selectively repeat performing the optimization processes for further optimizing the optimized cell placement if the fitness does not satisfy a predetermined criterion. The system can be applied to initial placement, routing, placement improvement and other problems. Rostoker clearly discloses decomposing a cell placement/routing problem and considering everything (cell placement, routes, etc.) independently, simultaneously, and in parallel, recomposing the individual optimizations to create an optimized cell placement/routing, and then consider its overall fitness and re-evaluating as necessary until the desired fitness is achieved. Rostoker clearly discloses that connection is routed while ignoring all other connections (abstract, column 14 lines 13-27, column 21 lines 27-38). Rostoker clearly discloses decomposing cell placement/routing into a plurality of cell placement/routing optimization processes that are performed simultaneously by parallel processors and that results of the optimization processes are recomposed to produce an optimized cell placement/routing. Rostoker clearly discloses that the individual processes are considered in independently, simultaneously, and in parallel (i.e. ignoring all other connections) and then are recomposed into an optimized cell placement/routing then reevaluated as necessary.

(3) a finding that one of ordinary skill in the art would have recognized that applying the known technique would have yielded predictable results and resulted in an improved system.

The combination of Andreev and Rostoker clearly disclose routing all connections independently and in parallel, wherein each connection is routed while ignoring all other connections.

One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings of Rostoker and Andreev since both concern the art of microelectronic integrated circuit design and the automation of processes thereof and as such, both are with in the same environment. Furthermore, Rostoker clearly discloses that the system can be applied to optimization problems in a number of diverse areas and specifically discloses that the system can be applied to routing (Rostoker; abstract, column 13 lines 47-64). Therefore, it would have been obvious to one of ordinary skill in the art that the time the invention was made to incorporate routing all required connections in parallel independently, as taught by, Rostoker into the system of Andreev because not only are they in the same field of endeavor but Rostoker also clearly discloses that the system disclosed by Rostoker can be applied not only to cell placement but also routing. In this case, one of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings of Rostoker and Andreev since both concern integrated circuit design and as such, both are with in the same environment (Andreev; paragraph [0002], Rostoker; column 1 lines 14-18), more particularly both clearly teach the routing of paths in integrated circuits (Andreev; abstract, paragraph [0015] Rostoker; column 14 lines 13-27, column 16 lines 27-40).

Furthermore, the Examiner fails to see how it would not be obvious to combine Rostoker and Andreev when by Applicant's own admission "the Rostoker parallelisation would indeed be a sensible way to implement a parallelisation framework to support the separate routing tasks described in Andreev..." while Applicant continues to argue that "...this would still not make Andreev able to route the nets fully in parallel, independently and simultaneously." the Examiner respectfully disagrees; Andreev clearly discloses the routing of interconnected regions independently, in parallel, and substantially simultaneously and Rostoker clearly discloses routing in parallel and simultaneously and since both Andreev and Rostoker concern integrated circuit design and as such, both are with in the same environment, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate independent, parallel, and simultaneous routing, as taught by, Rostoker into the system of Andreev for the purpose of allowing all connections to be considered simultaneously.

The rationale to support a conclusion that the claim would have been obvious is that a particular known technique was recognized as part of the ordinary capabilities of one skilled in the art. One of ordinary skill in the art would have been capable of applying this known technique to a known device (method, or product) that was ready for improvement and the results would have been predictable to one of ordinary skill in the art. One of ordinary skill in the art would have been capable of applying this known techniques, as taught by Rostoker, to a known device (method, or product), as taught by Andreev, that was ready for improvement and the results would have been predictable to one of ordinary skill in the art.